DOCUMENT RESUME

ED 363 419 PS 021 812

AUTHOR Mettetal, Gwendolyn; And Others
TITLE The Effect of Temperament on the Demands Made by Toddlers.
PUB DATE 26 Mar 93
NOTE 13p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (70th, New Orleans, LA, March 25-28, 1993).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Behavior Problems; Child Behavior; Definitions; Mothers; Parent Attitudes; *Parent Child Relationship; *Personality Traits; *Toddlers
IDENTIFIERS *Demanding Behavior; Maternal Responsiveness

ABSTRACT

This study examined correlations between temperament and demanding behavior in toddlers. Subjects were eight mothers and their children from 18 to 27 months of age. Mothers were interviewed in their homes and completed the Toddler Temperament Scale and the Parenting Stress Index. Mother-child interactions were videotaped for the duration of the visit, and all behaviors were later coded. It was hypothesized that children considered difficult would be more likely than other children to make externalizing demands, whereas the "sensitive" child would be more likely than others to make internalizing demands. Results indicated that temperament was related to child demands. Children rated as difficult made more internalizing demands than other children, and children rated as easy made fewer demands than other children. The proportion of externalizing demands was not related to ratings of temperament or global perceptions of demandingness. (MM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 363 419

THE EFFECT OF TEMPERAMENT ON THE DEMANDS MADE BY TODDLERS

Gwendolyn Mettetal, Ph.D.
Vicki Carpenter
Indiana University South Bend
Roxanne Thomas
Western Michigan University

Presented at the biennial meeting of the
Society for Research in Child Development
New Orleans, LA: March 26, 1993

This research was funded by an Indiana University Grant-In-Aid to the first author.

PS 021812

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Gwendolyn Mettetal
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

BEST COPY AVAILABLE

THE EFFECT OF TEMPERAMENT ON THE DEMANDS MADE BY TODDLERS

What is it like to live with a temperamentally extreme child? This is an important question because the child's behavior will have an impact on parental perceptions and behaviors (Bell, 1974). Thus a child's adult personality and behavior may be affected by his or her temperament, and by adult behaviors which are also affected by the child's temperament. In this paper, I hypothesize that one important effect of child temperament is the number of demands that child makes on parents, and that it is those demands which may influence parental behaviors.

Temperament

Definitions. Temperament "consists of biologically rooted individual differences in behavior tendencies that are present early in life and are relatively stable across various kinds of situations and over the course of time (Bates, 1989, p. 4)." Temperament seems to be present at birth or soon afterwards and becomes somewhat stable by 3 or 4 months (Emde, Gaensbauer, & Harmon, 1976) and there is growing evidence that its origins are largely genetic in nature (Buss & Plomin, 1984). While a child's temperament may be stable over time, interactions with the family and schools can have an enormous impact on how the child learns to handle these predispositions.

Current thinking about temperament is largely influenced by the work of Thomas and Chess (1977), clinical psychologists who were concerned with the impact of temperament on a child's long-term development. Their New York Longitudinal Study followed 141 children from early infancy into childhood and continued with periodic follow-ups. They identified nine temperamental traits that seemed important in children's interactions: rhythmicity, approach/withdrawal, adaptability, intensity, mood, and (to a lesser extent) activity level, persistence, distractibility, and sensory threshold. Certain patterns of these traits seemed to make children at risk for various psychological and behavioral problems.

Patterns. Although a child might theoretically show any combination of high and low scores on these temperamental traits, research suggests that certain patterns of traits are likely to occur. In their NYLS, Thomas and Chess found three patterns. About ten percent of their children were labelled "difficult", and were intense, arrythmic, withdrawing, negative, and slow to adapt. The slow-to-warm child (fifteen percent) showed similar traits but to a less extreme. The "easy" child was low on most of the traits, and made up forty percent of their children. An additional thirty-five percent did not fall into any clear pattern of traits. Difficultness has also been conceptualized as a unidimensional construct, ranging from easy to difficult (Lee & Bates, 1985). Once placed on this dimension, children could be grouped into average (within 1 s.d. of the mean), easy (more than one s.d. below the mean) and difficult (over 1 s.d. above the mean) categories.

Several researchers have also distinguished between *types* of difficult children. Although Thomas and Chess only identify one pattern of difficulty (the intense and withdrawing child), Brody et al. (1988), grouped the difficult children into those with high emotional intensity and those who were less persistent and more active. Turecki (1989) described an active/distractible group and a low active/nondistractible group within his difficult child sample. Current research on Attention Deficit-Hyperactivity Disorder (ADHD) would indicate that the active/distractible pattern of behavior is certainly problematic to parents (e.g. Barkley, 1990). In terms of the parenting experience, both types of difficultness may be relevent, but they may pose different sets of problems for parents.

Outcomes of extreme temperament. Thomas and Chess suggest that the "difficult" child is at considerable risk for emotional and behavioral problems. Intense and negative moods, low adaptability, fear of new experiences, and irregular body rhythms make it very difficult to parent these children. When traditional child management methods do not work, parents may turn to more severe emotional and physical punishment. A "difficult" temperament has been linked to child abuse, behavioral problems, emotional problems, and accident-proneness (Matheny, 1986, 1987). High scores on Difficulty in preschool predict later childhood behavior problems (Thomas et. al. 1978, from Lee & Bates, 1985). Parents' perceptions of siblings temperaments were related to perceptions of those children's adjustment level—the more difficult children were perceived as being less adjusted (Brody et al, 1988).

A difficult child may be more at risk for both internalizing and externalizing problems. Internalizing problems have been predicted by early unadaptabilty and frequency and intensity of negative affect (Bates, 1990) and by low approach scores and irritability (Prior, Sanson, & Oberklaid, 1989). Externalizing problems have been predicted from early resistance to control and frequency and intensity of negative

affect (Bates, 1990) and low cooperation-manageability, persistence, and irritability (Prior et al., 1989).

At the other extreme from the difficult child is the easy child. This child, described by Thomas and Chess (1977), Turecki (1989), and others as pleasant, regular, adaptable, approaching new things, and low-key in emotions, has been given little theoretical or research attention. This child is assumed to be at low risk for problems, and a delight for parents. This may indeed be the case, at least in low-risk families. However, there is some evidence that the easy child may also be at risk. Studies by deVries (1984, 1989) of African infants, found that the difficult babies survived drought conditions while the easy ones did not. It was suggested that the easy babies did not cry as much and were not given the scarce food. The complaining difficult babies were fed. If there is truth in the folk saying that "the squeaky wheel gets the grease", then difficult children may be more likely than others to get their share of needed resources. This suggests that the easy child may be at risk for neglect, particularly in situations of limited resources. Because the easy child has a high sensory threshold, hunger and pain may not be noticed by the child. A low emotional intensity and predominantly positive mood make it less likely that the child will communicate problems to the parent. Adaptability and approach to new things mean that the child will be frequently expected to change to meet others' needs and expectations, rather than vice versa. Put all these things together and you have a child who would rarely complain about neglect.

Which child will get the food, medical care, or the attention of the parent or teacher? The difficult child, who is intense, persistent, and negative, or the easy child, who is low-intensity, pleasant, and less persistent?

Temperament and Demands

One important dimension that underlies the parent's experience and perception of a child is that of demand—how much time, energy, and worry does this child demand? In general, younger children will demand more than older children, and children with illness or handicaps will demand more than children without those conditions. Most parents expect and understand the increased demands in these situations. I hypothesize that temperament is also an important factor in determining the level of demandingness, but this source of demand is rarely expected or understood by parents. Bates & Bayles (1984) found that mothers see difficult/demanding behavior as different from other aspects of temperament.

The temperamentally difficult child will make high demands on a parent. Bates (1989) describes social demandingness as one connotation of parent ratings of infant negative affect. A colicky infant who cries frequently and inconsolably demands almost constant attention from a parent. (Colic has been linked to an underlying difficult temperament by Carey, 1983; Taubman, 1988; and Lester & Boukydis, 1992). An

intense, active and distractible child must be constantly supervised to prevent accidents and destruction. Matheny (1986, 1987) found that the difficult child was more prone to accidents. The difficult child with a low sensory threshold, low adaptability and negative mood doesn't particularly need supervision, but may need frequent attention from parents to deal with fears and unhappiness. Several researchers (Thomas & Chess, 1977; and Bates & Bayles, 1988) have found difficult children to be at risk for emotional and behavioral problems. Lee & Bates (1985) found that difficult two year-olds were more likely to have conflictual interactions with their mothers. They hypothesized that these interactions might set up a coercive cycle that leads to later problems.

At the other end of the Temperament continuum is the easy child. An easy baby is one who sleeps frequently and regularly, is on a schedule, and cries only when extremely upset. When older, the easy child settles into routines, is less intense, and is generally happy and adaptable. An easy child doesn't make many demands on parents and is assumed to be developing well without much parental input.

I found support for this relationship between demand and temperament in a pilot study (Mettetal, 1992). Mothers of 38 toddlers from 12 to 18 months old completed questionnaires comprised of a temperament scale and a demand scale. There was a very high positive correlation between demandingness and temperament ($r(38)=.47$, $p<.003$).

The main purpose of the present study was to see if the results of the questionnaire pilot would replicate in actual behavior. That is, would there be a positive correlation between temperment and actual demanding behavior? Based on the pilot study and previous research, I hypothesized that such a correlation would occur.

A further research question involves the possible different patterns of "difficulty". Clinicians often divide problem behavior into the categories of internalizing and externalizing (Gresham & Elliott, 1990). Externalizing behaviors include aggression and poor control of temper, while internalizing includes behaviors that indicate anxiety or sadness. Can we predict internalizing and externalizing behaviors based on temperament? Based on the work by Bates and Prior, I predicted that the difficult children with an "energetic" pattern (active, distractible, intense) would be more likely than other children to make externalizing demands. I predicted that the "sensitive" child (low activity, persistent, intense, withdrawing) would be more likely than others to make internalizing demands.

METHODS

Subjects. Children from 18 to 27 months of age and their mothers were recruited to participate in this study. At this point, 8 children and their mothers have participated. There were 6 males and 2 females,

with a mean age of 21.4 months. Family income ranged from $15,000 to 55,000 (M= $37,500). Seven marriages were intact and one mother was divorced. Four mothers worked full-time, three worked part-time, and one was not employed ouside the home. Four were only children and four had older siblings. All were Caucasian.

Procedure. Families were visited in their home for one hour. A video camera was aimed at the room in general, but focused on the site where the assistant interviewed the mother. This camera recorded the entire interview, which consisted of four parts, each lasting 15 minutes:

1. Mother interacting—the mother was interviewed about her child's infancy, play styles, attachment, etc.
2. Mother alone—the mother completed a questionnaire
3. Mother with child—the mother played with the child in any way she chose
4. Mother listening—the research assistant gave the mother a brief presentation on setting limits for toddlers

These four parts let us to observe the child's behavior during several different types of situations--Mother obviously occupied by talking to the research assistant, Mother seemingly unoccupied as she completed the questionnaire, and Mother giving child her attention as they play.

Mothers were asked to behave as they normally would. Although mothers may have been making an effort to behave "nicely" due to the situation, the children seemed to be oblivious to the camera. Whenever the child wandered off camera, the assistant kept notes of the child's location and behavior. Siblings were entertained in another room by a sitter provided by the researcher. If questionnaires were not completed in the time allotted, the mother was given a return envelope and asked to mail the completed questionnaires to the researcher. All questionnaires were returned. Parents were given a copy of the videotape after all questionnaires were returned.

Questionnaire data

1. The *Toddler Temperament Scale* (Fullard, McDevitt, and Carey, 1984) is a 97-item temperament scale appropriate for children from 1 to 3 years of age. The age-appropriate norms were used to calculate z–scores for each subject on each subscale. These z-scores were summed to yield a total temperament score for each subject (*Temperament summary*). The pattern of trait scores was used to classify children into "easy", "intermediate", and "difficult" groups (*Temperament pattern*), using the classification scheme described by Fullard, et. al.

2. The *Parenting Stress Index* (Abidin, 1990) is a questionnaire that measures the overall stress that a parent is experiencing. The Child's scale includes a large number of temperament items as well as other

items tapping into potentially stressful child traits and behaviors. One subscale focuses on child demand. The norm data given was used to calculate z-scores for each child on the combined Child scale (*PSI-Child)* and for an overall stress score (*PSI*)

4. The *Demand Rating Scale* is a simple three item rating scale completed by coders and the research assistant. They were instructed to base the ratings on their overall feelings about the interaction; not on a count of the actual behaviors. For each tape, they were asked to use a seven-point scale to rate the overall level of demandingness of the child (*rating all*), the internalizing demandingness (*rating internalizing*), and the externalizing demandingness (*rating externalizing*).

Behavioral data

Coders. Three graduate students in Elementary Education were trained to code the videotapes. All three had extensive experience with young children.

Coding system. As coders viewed the videotape, they identified each time the child made a demand on the parent. The child's behaviors were coded for the type of demand that was being made: internalizing, externalizing, socialized, or seeking attention from the research assistant. The mother's behaviors were coded for the reaction she had to the demand: respond by giving what is demanded (*Respond positive*), respond by refusing to give what is demanded (*Respond negative*), ignoring the demand (*Ignore*), or delaying the child (*Delay*). A mother response was coded for each demand the child made.

The codes each tape received were summarized in several ways. First the total number of times each code was given was tallied. Each child's externalizing and internalizing score were combined to provide a nonsocialized demand score. Externalizing, internalizing, and socialized scores were summed to provide a total demand score.

Reliability. Reliability was assessed by having another coder code a randomly selected segment of each tape. Coders showed good agreement on code assignment, but low agreement on how many demand-response sequences to identify. That is, one coder might put a new code for each time the child whined "Mommy, wanna cookie," while another coder saw that as one long demand episode. Further training did not improve reliability. To counteract this effect, I calulated the *proportion* of each type of demand and response. For example, Coder A might identify 22 demands of which 13 were externalizing, resulting in a proportion of .59. Coder B might look at the same tape and divide it into 18 demands of which 9 were externalizing, resulting in a proportion of .50. These proportional codes had an overall agreement correlation of .85.

RESULTS

Questionnaires. Temperament and Parent Stress questionnaires were scored and the overall scores and subscale scores were converted to z-scores, using the norm information provided by the scale developers. (The mean z-scores of my sample were slightly below 0 on the overall scores and most subscales, suggesting that overall my sample was slightly easier in temperament and stressfulness than average.) There were high correlations among the PSI, the Child subscale of the PSI, the total temperament score (the sum of all subscale z-scores on the Toddler Temperament Scale), and the mother's temperament summary (the sum of scores on the mother's summary rating of temperament). This suggests that all are tapping the same dimension.

Observations. The one-hour taping sessions resulted in a mean number of 29.37 demand episodes, broken down into an average of 2.33 demand-response sequences each. However the reliability of these counts was not high, so the following results indicate analyses performed on the proportional data.

Insert Table 1 about here

The mean prortions of demand sequences were .11 internalizing, .26 externalizing, and .53 socialized demands. (The remaining 10 percent were bids for attention from the research assistant.) Thus, over one third (37 percent) of the child's demands could be considered negative. The means of the proportions of the mothers' responses were .34 positive, .19 negative, .04 delay, and .35 ignore. Thus 58 percent of the child's demands were not met by mothers.

Temperament and demand. The proportion of internalizing demands correlated highly with the temperament summary score (r=.72), with the PSI Child scale (r=.81) and with the temperament pattern (r=.71). The proportion of externalizing demands, the proportion of negative demands (internalizing plus externalizing), and the total number of demands did not correlate significantly with any measure of temperament or the PSI, including individual trait measures.

Insert Table 2 about here

Global ratings. Coders made global ratings of the child's internalizing, externalizing, and overall demanding behaviors based on their viewing of the videotapes. The research assistant made the same codings based on her observation of the interaction. There were no significant correlations between the ratings of the coders and the assistant, perhaps because the assistant saw all of the child's behaviors, not

just what was on-camera. The coders' ratings did not correlate significantly with any of the observational measures, even though their coding did correlate with temperament measures. In contrast, the assistant's codings were correlated with observation at several points. The proportion of negative child demands (internalizing plus externalizing) correlated positively (r=.83) with ratings of internalizing and correlated negatively with overall ratings (r= -.62) and externalizing ratings (r= -80).

Mother-child interaction. In terms of mother child interaction, the proportion of child negative demands was positively correlated (r=.81) with the proportion of mother negative responses.

Insert Table 3 about here

The proportion of positive child demands was positively correlated (r=.79) with the proportion of mother positive responses. The correlations between the separate negative child demands (internalizing and externalizing) and the separate negative mother responses (respond negative, delay, and ignore) were not significant.

DISCUSSION

Based on these results, temperament does seem to be related to child demands. As hypothesized, the difficult children made more internalizing demands and the easy children made fewer. The proportion of externalizing demands was not related to ratings of temperament or global perceptions of demandingness. Discussions with coders and assistants suggest that this may be because externalizing behavior is expected from children at this age, but internalizing is not. Another factor might be gender stereotypes—my sample was largely male and externalizing behavior is consonant with the male stereotype. However, a girl scored the highest on the Activity subscale of the Toddler Temperament Scale, suggesting that gender stereotypes are not the cause of these ratings.

A major limitation of this study was the brief period of time spent with the child and mother. Any single observational period may catch the child in atypical behavior. A more extensive sampling of child behavior, perhaps over a number of days, would produce more representative samples of behavior and allow both child and mother to become more comfortable in the presence of the camera and assistant.

To summarize, the preliminary results of this study indicate that temperament is indeed correlated with the number of demands that children make. These demands may play a role in the resulting abuse or neglect of temperamentally extreme children. Applications of the temperament concept to actual family situations should recognize that parental behavior may be a normal reaction to these extreme differences in demand behavior.

REFERENCES

Barkley, R.A. (1990) *Attention deficity hyperactivity disorder: A handbook for diagnosis and treatment.* New York: Guilford.

Bates, J.E. (1989). Applications of temperament concepts. In Kohnstamm, G.A., Bates, J.E., & Rothbart, M.K. (Eds.), *Temperament in childhood* (pp. 321-355). New York: Wiley.

Bates, J.E. (1990). Conceptual and empirical linkages between temperament and behavior problems: A commentary on the Sanson, Prior, and Kyrios study. *Merrill-Palmer Quarterly*, **36**, 193-199.

Bates, J.E. & Bales, K. (1984). Objective and subjective components in mothers' perceptions of their children from age 6 months to 3 years. *Merrill-Palmer Quarterly*, **30**, pp. 111-130.

Bell, R.Q. (1974). Contributions of human infants to caregiving and social interaction. In Lewis, M. & Rosenblum, L.A. (Eds.), *The effects of the infant on its caregiver* (pp. 1-21). New York: Wiley.

Burgess, R.L., & Conger, R. (1978). Family interactions in abusive, neglectful, and normal families. *Child Development*, **49**, 1163-1173.

Buss, A.H. & Plomin, R. (1984). *Temperament: Early developing personality traits*. Hillsdale, N.J.: Erlbaum.

Cameron, J.R. (1977) Parental treatment, children's temperament, and the risk of childhood behavioral problems: 1. Relationships between parental characteristics and changes in chilren's temperament over time. *American Journal of Orthopsychiatry*, **47**, 568-576.,

Cameron, J.R. & Rice, D. (1986). Developing anticipatory guidance programs based on early assessment of infant temperament: Two tests of a prevention model. *Journal of Pediatric Psychology*, **81**, 823-828.

Carey, W.B. (1974). Night waking and temperament in infancy. *Journal of Pediatrics*, **7**, pp. 331-337.

Carey, W.B. (1985). Interactions of temperament and clinical conditions. *Advances in Developmental and Behavioral Pediatrics*, **6**, 83-115.

Carey, W.B. (1989). Clinical use of temperament data in pediatrics. In Carey, W.B. & McDevitt, S. *Clinical and educational applications of temperament research* (pp. 127-139). Berwyn,PA: Swets North America.

Carey, W.B. & McDevitt, S. (1989). *Clinical and educational applications of temperament research*. Berwyn,PA: Swets North America.

deVries, M.W. (1984). Temperament and infant mortality among the Masai of East Africa. *American Journal of Psychiatry*, **141**, 1189-1194.

deVries, M.W. (1989). Difficult temperament: A universal and culturally embedded concept. In Carey, W.B. & McDevitt, S., *Clinical and educational applications of temperament research* (pp. 81-85). Berwyn, PA: Swets North America.

Emde, R.M., Gaensbauer, T.J., & Harmon, R.J. (1976). Emotion expression in infancy. *Psychological Issues Monographs*, No. 37.

Fullard,W., McDevitt, S.C., & Carey, W.B. (1984). Assessing temperament in one- to-three-year-old children. *Journal of Pediatric Psychology*, **9**, 205-216.

Gresham, F.M. & Elliott, S.N. (1990) *Social skills rating system manual*. Circle Pines, MN: American Guidance Service.

Lee, C.L. & Bates, J.E. (1985). Mother-child interaction at age two years and perceived difficult temperament. *Child Development*, **56**, 1314-1325.

Lester, B.M. & Boukydis, C.F.Z. (1992) Infantile colic; Acoustic cry characteristeics, maternal perception of cry, and temperament. *Infant Behavior and Development*, **15**, 15-26.

Matheny, A.P. (1986). Injuries among toddlers: Contributions from child, mother, and family. *Journal of Pediatric Psychology*, **11**, 163-176.

Matheny, A.P. (1987). Psychological characteristics of children in accidents. *Journal of Social Issues*, **43**, 45-60.

Mettetal, G. (1992). *Parental perceptions of temperament: The role of demandingness.* Unpublished manuscript, Indiana University South Bend.

Prior, M., Sanson, A., & Oberklaid,F. (1989). The Australian Temperament Project. In G.A. Kohnstamm, J.D. Bates, & M.D. Rothbart (Eds.), Temperament in childhood (pp. 537-554). New York: Wiley.

Taubman, B. (1988). Parental counseling compared with elimination of cow's milk or soy mild protein for the treatment of infant colic syndrome: A randomized trial. *Pediatrics*, **86**, 756-761.

Thomas, A. & Chess, S. (1977). *Temperament and development*. New York: Brunner/Mazel.

Tronick, E.Z. & Field, T. (1986). *Maternal depression and infant disturbance: New directions for child development* (Vol. 34). London: Jossey-Bass.

Turecki, S. (1989). *The difficult child*. New York: Bantam.

Weissbluth, M. (1981). Sleep duration and infant temperament. *Journal of Pediatrics*, **99**, 817-819.

Weissbluth, M. (1984). *Crybabies: What to do when baby won't stop crying*. New York: Berkley Books.

Table 1

Proportion of types of child demands and types of mother responses

Child demands		Mother responses	
Internalizing	.11	Responds +	.34
Externalizing	.26	Responds -	.19
Socialized	.53	Delay	.04
(Attention)	.10	Ignore	.35
All Negative (Internal + External)	.37	All Negative (R-, Delay, Ignore)	.58

Table 2

Correlation matrix of questionnaire responses to observed behaviors

	Internalized	Externalized	Socialized	All Negative (Int. + Ext.)
PSI-Child	.81*	-.39	.48	-.16
Temp. Summary	.71*	-.34	.16	-.20
Temp. pattern	.71*	-.30	-.04	-.15
Rating internal	-.26	.51	-.04	.77*
Rating external	-.14	-.30	.08	-.75*
Rating all	-.04	-.27	.37	-.51*

*p< .05

Table 3

Correlation matrix of mother and child observed responses

	Child			
Mother	Internalizing	Externalizing	Socialized	All Negative
Respond +	.38	.10	.70*	.05
Respond -	.34	.45	.23	.06
Delay	.19	.52	.21	.42
Ignore	.10	.24	.44	.51
All Neg.	.17	.25	.11	.86**

**p< .01
*p< .05